Refine Search

Search Results -

Terms	Documents
L6 and counter current	26

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L7

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Friday, April 27, 2007 Purge Queries | Printable Copy | Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ			
L7	L6 and counter current	26	L7
L6	L5 and wash$9	108	L6
L5	L4 and 562/$	134	L5
L4	terephthalic acid and remov$9 impur$6 and water	655	L4
L3	terephthalic acid and remov$9 impurot$6 and water	0	L3
DB=USPT; PLUR=YES; OP=ADJ			
L2	2894978.pn.	1	L2
L1	3513193.pn.	1	L1

END OF SEARCH HISTORY

Hit List

First Hit | Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 10 of 26 returned.

☐ 1. Document ID: US 20070038003 A1

L7: Entry 1 of 26 File: PGPB Feb 15, 2007

PGPUB-DOCUMENT-NUMBER: 20070038003
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20070038003 A1

TITLE: Process for removal of benzoic acid from an oxidizer purge stream

PUBLICATION-DATE: February 15, 2007

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Lin; Robert	Kingsport	TN	US
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US

US-CL-CURRENT: 562/494

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 2. Document ID: US 20070038002 A1

L7: Entry 2 of 26 File: PGPB Feb 15, 2007

PGPUB-DOCUMENT-NUMBER: 20070038002
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20070038002 A1

TITLE: Process for removal of benzoic acid from an oxidizer purge stream

PUBLICATION-DATE: February 15, 2007

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Lin; Robert	Kingsport	TN	US
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US

US-CL-CURRENT: 562/494

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 3. Document ID: US 20060264666 A1

L7: Entry 3 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264666
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264666 A1

TITLE: Enriched terephthalic acid composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US
Sheppard; Ronald Buford	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 4. Document ID: US 20060264665 A1

L7: Entry 4 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264665
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264665 A1

TITLE: Enriched isophthalic acid composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 5. Document ID: US 20060264664 A1

L7: Entry 5 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264664
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264664 A1

TITLE: Esterification of an exchange solvent enriched composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Parker; Kenny Randolph	Afton	TN	US
Gibson; Philip Edward	Kingsport	TN	US
Lin; Robert	Kingsport	TN	US
O'Meadhra; Ruairi Seosamh	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 6. Document ID: US 20060264663 A1

L7: Entry 6 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264663
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264663 A1

TITLE: Enriched carboxylic acid composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US
Sheppard; Ronald Buford	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 7. Document ID: US 20060264662 A1

L7: Entry 7 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264662
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264662 A1

TITLE: Esterification of an enriched composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US
Lin; Robert	Kingsport	TN	US
O'Meadhra; Ruairi Seosamh	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

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☐ 8. Document ID: US 20060264661 A1

L7: Entry 8 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264661
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264661 A1

TITLE: Process to produce an enrichment feed

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

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☐ 9. Document ID: US 20060264660 A1

L7: Entry 9 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264660
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264660 A1

TITLE: Process to produce a post catalyst removal composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Parker; Kenny Randolph	Afton	TN	US
Gibson; Philip Edward	Kingsport	TN	US

O'Meadhra; Ruairi Seosamh Kingsport TN US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 10. Document ID: US 20060264659 A1

L7: Entry 10 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264659
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264659 A1

TITLE: Process to produce an enriched composition through the use of a catalyst removal zone and an enrichment zone

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US
O'Meadhra; Ruairi Seosamh	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
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Search Results - Record(s) 11 through 20 of 26 returned.

☐ 11. Document ID: US 20060264658 A1

L7: Entry 11 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264658
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264658 A1

TITLE: Process to produce an enriched composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Parker; Kenny Randolph	Afton	TN	US
Gibson; Philip Edward	Kingsport	TN	US
O'Meadhra; Ruairi Seosamh	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 12. Document ID: US 20060264657 A1

L7: Entry 12 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264657
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264657 A1

TITLE: Process to enrich a carboxylic acid composition

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US
O'Meadhra; Ruairi Seosamh	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 13. Document ID: US 20060264656 A1

L7: Entry 13 of 26 File: PGPB Nov 23, 2006

PGPUB-DOCUMENT-NUMBER: 20060264656
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060264656 A1

TITLE: Enrichment process using compounds useful in a polyester process

PUBLICATION-DATE: November 23, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gibson; Philip Edward	Kingsport	TN	US
Parker; Kenny Randolph	Afton	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 14. Document ID: US 20050159617 A1

L7: Entry 14 of 26 File: PGPB Jul 21, 2005

PGPUB-DOCUMENT-NUMBER: 20050159617
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050159617 A1

TITLE: Process for production of a carboxylic acid/diol mixture suitable for use in polyester production

PUBLICATION-DATE: July 21, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Parker, Kenny Randolph	Afton	TN	US
Lin, Robert	Kingsport	TN	US
Gibson, Philip Edward	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 15. Document ID: US 20050159616 A1

L7: Entry 15 of 26 File: PGPB Jul 21, 2005

PGPUB-DOCUMENT-NUMBER: 20050159616
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050159616 A1

TITLE: Process for production of a dried carboxylic acid cake suitable for use in polyester production

PUBLICATION-DATE: July 21, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Parker, Kenny Randolph	Afton	TN	US
Lin, Robert	Kingsport	TN	US
Gibson, Philip Edward	Kingsport	TN	US

US-CL-CURRENT: 562/485

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 16. Document ID: US 20050038288 A1

L7: Entry 16 of 26 File: PGPB Feb 17, 2005

PGPUB-DOCUMENT-NUMBER: 20050038288
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050038288 A1

TITLE: Extraction process for removal of impurities from an oxidizer purge stream in the synthesis of carboxylic acid

PUBLICATION-DATE: February 17, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Lin, Robert	Kingsport	TN	US
de Vreede, Marcel	Kingsport	TN	US

US-CL-CURRENT: 562/400; 562/600

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 17. Document ID: US 20040249208 A1

L7: Entry 17 of 26 File: PGPB Dec 9, 2004

PGPUB-DOCUMENT-NUMBER: 20040249208
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040249208 A1

TITLE: Extraction process for removal of impurities from mother liquor in the

synthesis of carboxylic acid

PUBLICATION-DATE: December 9, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Lin, Robert	Kingsport	TN	US
de Vreede, Marcel	Kingsport	TN	US

US-CL-CURRENT: 562/600; 502/20, 562/608

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 18. Document ID: US 20040249207 A1

L7: Entry 18 of 26 File: PGPB Dec 9, 2004

PGPUB-DOCUMENT-NUMBER: 20040249207
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040249207 A1

TITLE: Extraction process for removal of impurities from an aqueous mixture

PUBLICATION-DATE: December 9, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Lin, Robert	Kingsport	TN	US
de Vreede, Marcel	Kingsport	TN	US

US-CL-CURRENT: 562/600; 562/608

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 19. Document ID: US 6133476 A

L7: Entry 19 of 26 File: USPT Oct 17, 2000

US-PAT-NO: 6133476
DOCUMENT-IDENTIFIER: US 6133476 A

TITLE: Process for purification of aromatic polycarboxylic acids

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 20. Document ID: US 6113866 A

L7: Entry 20 of 26 File: USPT Sep 5, 2000

US-PAT-NO: 6113866
DOCUMENT-IDENTIFIER: US 6113866 A
** See image for Certificate of Correction **

TITLE: Apparatus for preparing purified terephthalic acid

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
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Search Results - Record(s) 21 through 26 of 26 returned.

☐ 21. Document ID: US 6013835 A

L7: Entry 21 of 26 File: USPT Jan 11, 2000

US-PAT-NO: 6013835
DOCUMENT-IDENTIFIER: US 6013835 A
** See image for Certificate of Correction **

TITLE: Method and apparatus for preparing purified terephthalic acid

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 22. Document ID: US 5840968 A

L7: Entry 22 of 26 File: USPT Nov 24, 1998

US-PAT-NO: 5840968
DOCUMENT-IDENTIFIER: US 5840968 A

TITLE: Method and apparatus for preparing purified terephthalic acid

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 23. Document ID: US 5654470 A

L7: Entry 23 of 26 File: USPT Aug 5, 1997

US-PAT-NO: 5654470
DOCUMENT-IDENTIFIER: US 5654470 A
** See image for Certificate of Correction **

TITLE: Recovery of components from polyester resins

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 24. Document ID: US 5200557 A

L7: Entry 24 of 26 File: USPT Apr 6, 1993

US-PAT-NO: 5200557
DOCUMENT-IDENTIFIER: US 5200557 A

TITLE: Process for preparation of crude terephthalic acid suitable for reduction to prepare purified terephthalic acid

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 25. Document ID: US 5008450 A

L7: Entry 25 of 26 File: USPT Apr 16, 1991

US-PAT-NO: 5008450
DOCUMENT-IDENTIFIER: US 5008450 A

TITLE: Process for exchanging dispersing medium of terephthalic acid slurry

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 26. Document ID: US 4939297 A

L7: Entry 26 of 26 File: USPT Jul 3, 1990

US-PAT-NO: 4939297
DOCUMENT-IDENTIFIER: US 4939297 A
** See image for Certificate of Correction **

TITLE: Extraction process for removal of impurities from terephthalic acid filtrate

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
L6 and counter current	26

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      (FILE 'HOME' ENTERED AT 15:26:57 ON 27 APR 2007)

      FILE 'CAPLUS' ENTERED AT 15:27:30 ON 27 APR 2007

      FILE 'REGISTRY' ENTERED AT 15:27:39 ON 27 APR 2007
L1             1 S TEREPHTHALIC ACID/CN

      FILE 'CAPLUS' ENTERED AT 15:28:09 ON 27 APR 2007
L2           882 S 100-21-0/PROC
L3          4019 S 100-21-0/PREP
L4           579 S 100-21-0/PUR
L5          4665 S L2 OR L3 OR L4
L6             0 S L5 AND COUNTER LIQUID EXCHANG? AND (SOLID AND LIQUID SEPARAT?
L7             0 S L5 AND COUNTER AND (SOLID AND LIQUID SEPARAT?)
L8             3 S L5 AND(SOLID AND LIQUID SEPARAT?)

      FILE 'CAPLUS' ENTERED AT 16:32:33 ON 27 APR 2007

=> s l5 and liquid exchang?
        770432 LIQUID
        712330 EXCHANG?
           134 LIQUID EXCHANG?
                 (LIQUID(W)EXCHANG?)
L9           0 L5 AND LIQUID EXCHANG?

=> s l5 and centrifu?
        164670 CENTRIFU?
L10          77 L5 AND CENTRIFU?

=> s l10 and (filter?)
        562303 FILTER?
L11          19 L10 AND (FILTER?)

=> d 1-19 ibib abs hitstr

L11  ANSWER 1 OF 19  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2007:153015  CAPLUS
DOCUMENT NUMBER:          146:235374
TITLE:                    Pollution-free process for treating residue from film
                          evaporator for para-terephthalic acid production
INVENTOR(S):              Shen, Fuchang; Shen, Jiandong; Shen, Xiaodong
PATENT ASSIGNEE(S):       Peop. Rep. China
SOURCE:                   Faming Zhuanli Shenqing Gongkai Shuomingshu, 7pp.
                          CODEN: CNXXEV
DOCUMENT TYPE:            Patent
LANGUAGE:                 Chinese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

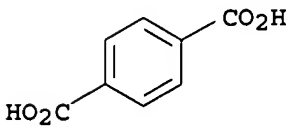
      PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
      --------------      ----   --------    --------------------    --------
      CN 1907869           A     20070207    CN 2006-10040834        20060728
PRIORITY APPLN. INFO.:                       CN 2006-10040834        20060728
AB    The title process comprises: cooing the waste liquor from film evaporator
      to 10-50°, or setting the waste liquor at 70-90° to recover
      PTA (para-terephthalic acid), and cooling to 10-50°; and separating with
      filter press or centrifuges under allowing complex use
      and incineration treatment of the solid residues, storing the filtrate for
      beating residues from film evaporator, and allowing complex use and
      incineration treatment of PTA residues and recovering Co and Mn after Co
      and Mn in the filtrate reaching a certain concentration and crystallizing in
PTA
      residues.  The wastewater can be recycled after treatment, which realizing
```

green production of PTA.

IT 100-21-0P, 1,4-Benzenedicarboxylic acid, preparation
RL: IMF (Industrial manufacture); PUR (Purification or recovery); PREP (Preparation)
(pollution-free process for treating residue from film evaporator for para-terephthalic acid production)

RN 100-21-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1332498 CAPLUS
DOCUMENT NUMBER: 144:52061
TITLE: Filtrate preparation process for terephthalic acid filtrate treatment
INVENTOR(S): Sheppard, Ronald Buford
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005283022	A1	20051222	US 2004-872248	20040618
CA 2567369	A1	20060119	CA 2005-2567369	20050609
WO 2006007348	A1	20060119	WO 2005-US20323	20050609
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1756030	A1	20070228	EP 2005-759397	20050609
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				

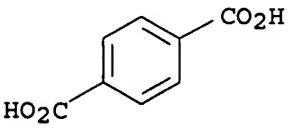
PRIORITY APPLN. INFO.:
US 2004-872248 A 20040618
WO 2005-US20323 W 20050609

AB A process for the production of terephthalic acid comprises (A) discharging from an oxidation reactor a crude stream comprising crude terephthalic acid solids, catalyst, impurities, and solvent, and (B) without adding a fresh feed of solvent to the crude stream, separating a portion of solvent, catalyst, and at least one impurity from the crude stream to form: (B1) a mother liquor composition comprising the separated solvent, catalyst, and at least one impurity; and (B2) a dewatered crude terephthalic acid composition comprising a remaining portion of solvent, catalyst, impurities, and an enriched concentration of crude terephthalic acid solids relative to the solids content in the

crude stream. The process has the advantage of removing a higher concentration of impurities and/or catalyst in the mother liquor stream, and/or feeding a mother liquor stream to an impurity removal and/or catalyst recovery process at a reduced flow rate, thereby reducing the size of equipment needed in such processes. Process flow diagrams are presented.

IT 100-21-0P, Terephthalic acid, preparation
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PREP (Preparation); PROC (Process)
(filtrate preparation process for terephthalic acid filtrate treatment)

RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 3 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:513653 CAPLUS
DOCUMENT NUMBER: 141:54797
TITLE: Process for the purification of a crude carboxylic acid slurry
INVENTOR(S): Sumner, Charles Edwan, Jr.; Bowers, David Taylor; Gibson, Philip Edward; Lin, Robert; Arnold, Ernest William, III; Fugate, Eric Jackson; Stevenson, George M.; McClanahan, Wayne; Carrell, Harry Lee
PATENT ASSIGNEE(S): Eastman Chemical Company, USA
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004052820	A1	20040624	WO 2003-US38305	20031203
WO 2004052820	A8	20040930		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004110981	A1	20040610	US 2003-645734	20030821
US 7161027	B2	20070109		
US 2004110980	A1	20040610	US 2003-645737	20030821
US 7074954	B2	20060711		
US 2005065373	A1	20050324	US 2003-667744	20030922
US 7132566	B2	20061107		
CA 2505976	A1	20040624	CA 2003-2505976	20031203
AU 2003293250	A1	20040630	AU 2003-293250	20031203
EP 1569887	A1	20050907	EP 2003-790245	20031203
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

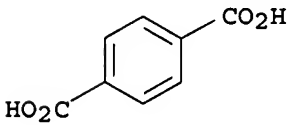
BR 2003016450	A	20051011	BR 2003-16450		20031203
JP 2006509044	T	20060316	JP 2005-508451		20031203
IN 2005DN01386	A	20070105	IN 2005-DN1386		20050406
IN 2005DN01674	A	20070105	IN 2005-DN1674		20050425
IN 2005DN01746	A	20070105	IN 2005-DN1746		20050428
PRIORITY APPLN. INFO.:			US 2002-315294	A	20021209
			US 2002-315295	A	20021209
			US 2003-645734	A	20030821
			US 2003-645737	A	20030821
			US 2003-667744	A	20030922
			WO 2003-US38305	W	20031203
			WO 2003-US38306	W	20031203
			WO 2003-US38307	W	20031203

AB The title process comprises removing impurities from a crude carboxylic acid slurry (e.g., terephthalic acid) in a solid-liquid displacement zone to form a slurry product. The slurry product is further treated in a staged oxidation zone and a crystallization zone to from a crystallized product. The crystallized product is cooled in a cooling zone and subsequently filtered and dried in a filtration and drying zone. The process produces a purified carboxylic acid product having good color and low impurity levels without the use of purification steps like hydrogenation; a process flow diagram is presented.

IT 100-21-0P, Terephthalic acid, preparation
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PREP (Preparation); PROC (Process)
(process for the purification of a crude carboxylic acid slurry)

RN 100-21-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 4 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:473400 CAPLUS

DOCUMENT NUMBER: 141:24129

TITLE: Process for the oxidative purification of terephthalic acid

INVENTOR(S): Sheppard, Ronald Buford; Tennant, Brent Alan; Woodruff, Thomas Earl; Lin, Robert

PATENT ASSIGNEE(S): Neth.

SOURCE: U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 315,294, abandoned.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004110981	A1	20040610	US 2003-645734	20030821
US 7161027	B2	20070109		
CA 2505976	A1	20040624	CA 2003-2505976	20031203
WO 2004052820	A1	20040624	WO 2003-US38305	20031203
WO 2004052820	A8	20040930		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,

CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

WO 2004052822	A1	20040624	WO 2003-US38307		20031203

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003293250	A1	20040630	AU 2003-293250	20031203
AU 2003293252	A1	20040630	AU 2003-293252	20031203
EP 1569887	A1	20050907	EP 2003-790245	20031203

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

EP 1569889	A1	20050907	EP 2003-790247	20031203

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

BR 2003016450	A	20051011	BR 2003-16450	20031203
BR 2003016461	A	20051011	BR 2003-16461	20031203
CN 1723184	A	20060118	CN 2003-80105533	20031203
CN 1723185	A	20060118	CN 2003-80105548	20031203
JP 2006509044	T	20060316	JP 2005-508451	20031203
IN 2005DN01386	A	20070105	IN 2005-DN1386	20050406

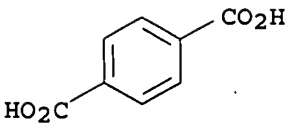
PRIORITY APPLN. INFO.:	US 2002-315294	B2	20021209
	US 2002-315295	A	20021209
	US 2003-645734	A	20030821
	US 2003-645737	A	20030821
	US 2003-667744	A	20030922
	US 2003-667774	A	20030922
	WO 2003-US38305	W	20031203
	WO 2003-US38307	W	20031203

AB A process to produce a purified carboxylic acid slurry (e.g., terephthalic acid) is described which comprises removing impurities from a crystallized product in a solid liquid displacement zone to form the purified carboxylic acid slurry. The purified carboxylic acid slurry is further cooled in a cooling zone and subsequently filtered and dried in a filtration and drying zone. The process produces purified carboxylic acid product having good color and low impurity levels without the use of purification steps like hydrogenation or filtrate purge; process flow diagrams are presented.

IT 100-21-0P, Terephthalic acid, preparation
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); PREP (Preparation);
PROC (Process)
(process for the oxidative purification of terephthalic acid)

RN 100-21-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)

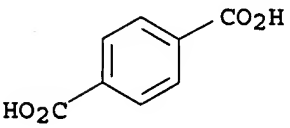


REFERENCE COUNT: 77 THERE ARE 77 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:87152 CAPLUS
DOCUMENT NUMBER: 138:108643
TITLE: Process of recovering benzoic acid from terephthalic acid oxidation residue
INVENTOR(S): Zhu, Peiyu; Yao, Xuesong; Ren, Min; Shu, Xinhua
PATENT ASSIGNEE(S): Yangzi Petrochemical Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1332145	A	20020123	CN 2001-127075	20010807
PRIORITY APPLN. INFO.:			CN 2001-127075	20010807

AB The process comprises dissolving terephthalic acid (TA)-oxidation waste solid in water at 50-100°, filtering in vacuo, crystallizing at room temperature, separation by centrifuge, drying the filtered cake, and purifying by rectification at 120-140°. Stirring 529 g TA oxidation residue and 2116 g H2O at 90°, filtering, crystallizing the filtrate, and drying the filtered cake gave 297 g crude TA. Crystallization of the mother liquor, filtering and purifying the filtered cake (233 g) by rectification gave benzoic acid with purity 98%.
IT 100-21-0P, Terephthalic acid, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(process of recovering benzoic acid from terephthalic acid oxidation residue)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:165204 CAPLUS
DOCUMENT NUMBER: 120:165204
TITLE: Process and apparatus for the production of purified terephthalic acid
INVENTOR(S): Turner, John Arthur; Hindmarsh, Eric; Parker, David; Milne, Ian Peter
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

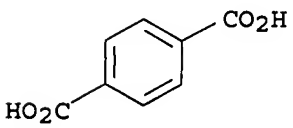
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9324440	A1	19931209	WO 1993-GB1019	19930519
W: AU, BR, CA, JP, KR, RU, UA, US, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9340815	A	19931230	AU 1993-40815	19930519
AU 681078	B2	19970821		
EP 642490	A1	19950315	EP 1993-910226	19930519
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 07507291	T	19950810	JP 1993-500285	19930519
BR 9306434	A	19980915	BR 1993-6434	19930519
CN 1085889	A	19940427	CN 1993-108211	19930529
US 5583254	A	19961210	US 1995-343419	19950113
US 5698734	A	19971216	US 1996-668756	19960624
US 5840965	A	19981124	US 1997-899093	19970723

PRIORITY APPLN. INFO.:		
GB 1992-11441	A	19920529
GB 1992-23966	A	19921116
WO 1993-GB1019	A	19930519
US 1995-343419	A1	19950113
US 1996-668756	A1	19960624

AB Purified terephthalic acid (I) is prepared by subjecting an aqueous solution of crude I to hydrogenation to reduce impurities, crystallizing this solution to produce a slurry of purified I in an aqueous liquor, and carrying out an integrated I separation and washing process without a reslurrying stage between the separation and washing. The integrated separation and washing process is conducted at elevated pressure by means of a belt filtration system in which the pressure on the downstream side of the filter belt is no less than that prevailing following pressure let-down in the crystallization process. Wash liquor may be applied to the I cake formed during an optional centrifugation step. Process flow diagrams and apparatus diagrams and schematics are presented.

IT 100-21-0P, Terephthalic acid, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(purification of, by hydrogenation, filtration and crystallization)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:461059 CAPLUS
DOCUMENT NUMBER: 105:61059
TITLE: Recovering terephthalic acid
INVENTOR(S): Tan, Kazuo; Hironaka, Takashi; Yano, Hiroshi
PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 61043139	A	19860301	JP 1984-163491	19840803
JP 05040742	B	19930621		

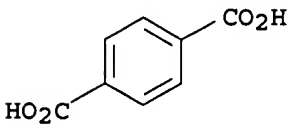
PRIORITY APPLN. INFO.: JP 1984-163491 19840803

AB Terephthalic acid (I) is recovered from wastewaters (e.g. from polyester fibers) containing dialkali salts of I and ash, by adjusting the pH to 5-6 to precipitate 2-20% of total I, separated with ash, then the filtrate is acidified to pH ≤4 to precipitate I, giving I of low ash content. Thus, NaOH wastewater (pH 9.3, containing 1.16% I as disodium salt and 46 ppm ash) from polyester fiber weight reduction process was acidified by aqueous H_2SO_4 to pH 5.4 to precipitate 12% I, filtered, and the filtrate was acidified to pH ≤3.5 and centrifuged to recovery 87% I containing 120 ppm ash vs. 3200 for I recovered by acidification of the wastewater in a single step.

IT 100-21-0P, preparation
RL: PREP (Preparation)
(recovery of, from polyester fiber manufacturing wastewaters)

RN 100-21-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1986:89174 CAPLUS
DOCUMENT NUMBER: 104:89174
TITLE: Recovery of terephthalic acid
INVENTOR(S): Hironaka, Takashi; Uchibori, Toshio
PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60163843	A	19850826	JP 1984-19798	19840206
JP 04056814	B	19920909		

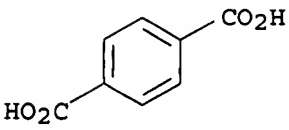
PRIORITY APPLN. INFO.: JP 1984-19798 19840206

AB Crystalline terephthalic acid (I) of large size and good filterability is recovered from the wastewater of a polyester-fiber weight-reducing process by acid precipitation of the wastewater under pressure at 100-200°. Thus, a polyester-fiber weight-reduction wastewater (0.33% NaOH, 1.69% I as di-Na salt, pH 13.3) was autoclaved with H_2SO_4 at 120°/1.7 atm for 30 min to give a slurry (pH 2.7), which was centrifugally extracted to give crystalline I with average particle size 110 μ and water content 12%, compared with 14 μ and 48%, resp., when the autoclaving process was performed at 40°/1 atmospheric

IT 100-21-0P, preparation
RL: PREP (Preparation)
(recovery of, by acid precipitation of wastewater from polyester-fiber weight-reduction processes)

RN 100-21-0 CAPLUS

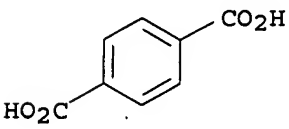
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1981:406840 CAPLUS
DOCUMENT NUMBER: 95:6840
TITLE: Terephthalic acid
PATENT ASSIGNEE(S): Kuraray Yuka Co., Ltd., Japan
SOURCE: Jpn. Tokkyo Koho, 4 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56002538	B	19810120	JP 1975-61299	19750522
PRIORITY APPLN. INFO.:			JP 1975-61299 A	19750522

AB Terephthalic acid (I) was prepared by oxidation of p-xylene over heavy metal catalysts with mol. O during which the reaction residues were separated as powders by concentration of the mother liquor and addition of aliphatic ketones. Thus,
a mixture of p-xylene 20, HOAc 77, Co(OAc)2.4H2O (II) 0.1, Mn(OAc)2.4H2O (III) 0.2, and NaBr 0.1 part was heated with air at 220° and 1000 rpm, the mixture centrifuged, solids separated, the liquid washed with HOAc and distilled to leave 0.75 part residue containing 25% HOAc, which was stirred with 3.4 g Me2CO, filtered, the cake washed with 0.75 parts Me2CO to recover 90% II, 98% III and 70% NaBr.
IT 100-21-0P, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by oxidation of p-xylene)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1978:431508 CAPLUS
DOCUMENT NUMBER: 89:31508
TITLE: Recovery of a liquid-phase oxidation catalyst
INVENTOR(S): Shigeyasu, Shiroo; Yamazaki, Hatsutaro; Kuki, Michio
PATENT ASSIGNEE(S): Matsuyama Sekiyu Kagaku K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53037592	A	19780406	JP 1976-113378	19760920

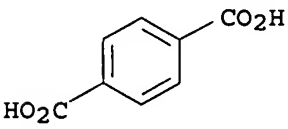
PRIORITY APPLN. INFO.: JP 1976-113378 A 19760920

AB Alkylbenzenes in lower fatty acid solns. were oxidized to aromatic carboxylic acids in the presence of Co and Mn salts and separated from the aromatic carboxylic acids and the lower fatty acids. The metals in the residual solution were extracted into H2O, Fe and Cr were separated, and precipitation made with alkali carbonate in the presence of NH3 or NH4+ ≤2.0-fold amount of the metals as NH3. Thus, the residual solution 700 kg containing Co 4.6, Mn 0.20, Fe 0.31, Cr 0.08%, Pb 3.9 and Cu 120 ppm from oxidation of p-xylene with air to terephthalic acid was added with H2O 1 ton, stirred with air 300 L/min at 70° for 1 h under reflux, cooled to 30°, and centrifuged. The 4 aqueous phases combined 3.8 ton containing 3.1, 0.13, 0.007%, 3, 2.6, and 8.0 ppm, resp., were mixed with 126 kg aqueous NH3 (0.29-fold of Co) and 20% Na2CO3 to give pH 9.5, stirred at 30° for 1 h, filtered on a vacuum rotating cylinder filter, washed, and dissolved in AcOH to contain 3.0, 0.125, 0.004%, and <2 ppm each, resp.

IT 100-21-0P, preparation
RL: PREP (Preparation)
(manufacture of, by oxidation of xylene, recovery of cobalt-manganese catalysts in)

RN 100-21-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1969:106219 CAPLUS
DOCUMENT NUMBER: 70:106219
TITLE: Terephthalic acid
PATENT ASSIGNEE(S): Dynamit Nobel A.-G.
SOURCE: Brit., 5 pp.
CODEN: BRXXAA
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

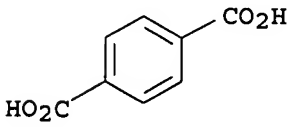
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1144687		19690305	GB 1967-39645	19670830
DE 1299627			DE	
FR 1551031			FR	
US 3594414		19710720	US	19670901
ZA 6704825		19670000	ZA	

PRIORITY APPLN. INFO.: DE 19660903

AB Pure, fiber grade terephthalic acid (I) was obtained by hydrolyzing pure di-Me terephthalate (II) in an aqueous solution of 1 or more neutral alkali metal and (or) alkaline earth metal salts, the reaction taking place under superatm. pressure in a corrosion resistant vessel at 180-280°. Thus, II is heated at 30-50 atmospheric gage with 2-4 times its weight of a 5-50% neutral salt

solution in distilled water in a Ti autoclave for 2-3 hrs. at 180-250° and MeOH distilled The product is filtered or centrifuged after cooling to 60-80°. The filtrate is returned as a hydrolysis component and only the operational loss needs to be made up. The method may also be carried out without distilling MeOH. The MeOH and a part of the water are distilled after termination of the reaction. Small residual amts. of II and mono-Me terephthalate (III), which are water-vapor volatile, may be thus extracted The II and the III or the entire distillate are returned to the reaction vessel. I is water-washed, then acetone-, MeOH-, or dioxane-washed. If the extract obtained is liberated from solvent by distillation, .apprx.0.1-2% of a mixture of II, III and I in the ratio of 1:3:1 is obtained, which may be returned to the reaction vessel. Acetone may be used in the drying of I. On a small scale, the process can be run discontinuously. In an example 1 mole II, 400 cc. water, and 100 g. NaCl was heated 6 hrs. at 250° with withdrawal of MeOH during the reaction to give 97% I. Other neutral salts used included KCl or CaCl2.2-H2O.

IT 100-21-0P, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(purification of)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



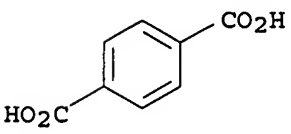
L11 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1967:411350 CAPLUS
DOCUMENT NUMBER: 67:11350
TITLE: Terephthalic acid
PATENT ASSIGNEE(S): Chemische Werke Witten G.m.b.H.
SOURCE: Neth. Appl., 7 pp.
CODEN: NAXXAN
DOCUMENT TYPE: Patent
LANGUAGE: Dutch
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6610623		19670130	NL 1966-10623	19660728
DE 1259326			DE	
FR 1487936			FR	
GB 1155589			GB	
US 3513193		19700519	US	19660728
PRIORITY APPLN. INFO.:			DE	19650728

AB Terephthalic acid with a high degree of purity is separated from the oxidation products of p-toluic acid by addition of ≤50% xylene, ≤15% H2O, and (or) ≤30% HOAc (80-100% concentration) at 220-50°. The oxidation of p-toluic acid is carried out as in Ger. 1,041,945 (CA 55: 6445e). The precipitated terephthalic acid is filtered or centrifuged off and has saponification number 676. Thus, addition of 5-15% H2O and treatment at 200-50° for 0.5-4 hrs./7-13 atmospheric gave 24.3-32.9% terephthalic acid of saponification number 649-76.

IT 100-21-0P, preparation
RL: PUR (Purification or recovery); PREP (Preparation)

(purification of)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)

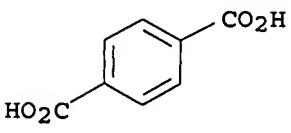


L11 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1967:116130 CAPLUS
DOCUMENT NUMBER: 66:116130
TITLE: Purification of aromatic polycarboxylic acids
PATENT ASSIGNEE(S): Standard Oil Co.
SOURCE: Neth. Appl., 24 pp.
CODEN: NAXXAN
DOCUMENT TYPE: Patent
LANGUAGE: Dutch
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6606727		19661118	NL 1966-6727	19660517
DE 1593541			DE	
FR 1480014			FR	
GB 1152576			GB	
JP 51032618		19760319	JP 1974-120969	19741022
US 3639465		19720201	US	19680618
PRIORITY APPLN. INFO.:			US	19650517

AB Cf. following abstract To prepare pure polycarboxylic acids, that can be esterified directly with diols, the impurities are separated by hydrogenation in aqueous solution with noble metal catalysts, e.g. Pt and (or) Pd-C. Terephthalic acid (I) obtained by oxidation of p-xylene with air and heavy metal bromide catalyst (U.S. 2,833,816, CA 53, 1260e) or by other methods contains the impurity 4-carboxybenzaldehyde (II). To avoid poisoning of the catalyst, the H2O must be demineralized to <0.00001% impurities with chelate-forming resins. The hydrogenation is carried out for 0.001-10 hrs. at 240-88° by using N-H-mixts. in an apparatus of Ti or coated with Ti. Thus, a sludge containing 20-5% crude I is preheated to 278° at 69 kg./cm.2 and fed to a dissolving vessel, then into a hydrogenation reactor, where a 7 kg./cm.2 partial H pressure is provided. At 274° and 0.37 mole H, 4540 kg. I solution is introduced. The reaction is kept at <280°. The hydrogenated solution is filtered under pressure, expanded in a crystallization vessel, and the I sludge centrifuged to obtain I containing <0.0025% II and <0.0095% p-HOH2CC6H4CO2H.

IT 100-21-0P, preparation
RL: PREP (Preparation)
(hydrogenation of terephthalaldehydic acid impurity in)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



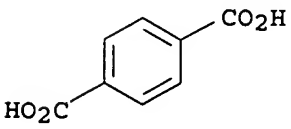
L11 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1963:475085 CAPLUS
DOCUMENT NUMBER: 59:75085
ORIGINAL REFERENCE NO.: 59:13888g-h,13889a
TITLE: Separating benzenecarboxylic acids
INVENTOR(S): Couper, Alistair S.; Kalfadelis, Charles D.
PATENT ASSIGNEE(S): Standard Oil Co. (Indiana)
SOURCE: 4 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3098855		19630723	US 1959-807017	19590417
PRIORITY APPLN. INFO.:			US	19590417

AB The separation of the title acids obtained by the oxidation of mixed petroleum xylenes (Belg. 546,191) is vastly improved by a preconditioning process as follows: The acid mixture (150 lb.) containing 51.9 weight-% phthalic acid (I), and 500 lb. H2O was placed in a 100 gal. autoclave. Preconditioning was begun, with stirring, by heating the mixture from 75 to 330°F. during 45 min. at autogenous pressure. At this temperature I is 18 times as soluble, while the iso and terephthalic acids are each 14 times as soluble as at 212°F., the filtration temperature The autoclave temperature was held at 330°F. with stirring for 30 min., the pressure released, and the contents cooled at an even rate by evaporation during 45 min., to 212°F. The condensate contained 30% of the initial H2O present. The slurry of phthalic acids and H2O was kept under agitation for an addnl. 60 min. at 212°F. to complete solution of I, then filtered (28 in. Hg), using number 6 duck canvas filter cloth. Extract analysis showed weight-% I = 93.7; isophthalic acid = 5.2; terephthalic acid = 2.9. Centrifugal separation is described. Crystals thus preconditioned, become free fowing, and offer substantially improved ease of handling both wet and dry. The process is eminently useful for adaptation to any solvent-aromatic acid system.

IT 100-21-0P, Terephthalic acid
RL: PREP (Preparation)
(separation of, from benzenecarboxylic acid)

RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1961:76011 CAPLUS
DOCUMENT NUMBER: 55:76011
ORIGINAL REFERENCE NO.: 55:14391i,14392a
TITLE: Tetrachloroterephthalic acid
INVENTOR(S): Guthke, Friedrich Wilhelm
PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik Akt.-Ges.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

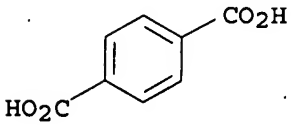
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1078563		19600331	DE 1958-B50810	19581023

AB Terephthalic acid (I) is chlorinated at elevated temperature and pressure in fuming H2SO4 (II) with iodine as catalyst to tetrachloro derivative of I (III). The crystalline III is separated immediately from the liquid mixture by filtration or centrifugation. At 40-90°, Cl 852 is introduced into a solution of I 498 and iodine 4.4 in II 4440 parts containing 24% SO3 at 7 atmospheric When the Cl uptake is completed, the mixture is cooled, depressurized, filtered, and the residue washed with H2O and dried to yield III 642 parts containing 46.5% Cl. III is purified by dissolving in NaOH, filtering, and repptg. with HCl to give III with 46.7% Cl, m. 336-9°.

IT 100-21-0P, Terephthalic acid
RL: PREP (Preparation)
(manufacture of)

RN 100-21-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1958:82881 CAPLUS

DOCUMENT NUMBER: 52:82881

ORIGINAL REFERENCE NO.: 52:14690b-c

TITLE: Purification of terephthalic acid esters

INVENTOR(S): Sinn, Richard

PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik Akt.-Ges.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

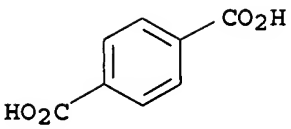
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2828330		19580325	US	

AB Terephthalate esters (I) are purified by mixing I vapor with that of an auxilliary liquid (II) and condensing the liquid under such conditions that at least the bulk of the II is condensed. II is an aromatic or aliphatic hydrocarbon or an alc. or ketone boiling above the m.p. of I and having a low solvent action on I at room temperature but readily dissolving the impurities. The I sep. in finely divided form and is isolated by centrifuging or filtering. If high boiling contaminants are present the vapor mixture may be fractionated through a suitable column.

IT 100-21-0P, Terephthalic acid
RL: PREP (Preparation)
(esters, purification of)

RN 100-21-0 CAPLUS

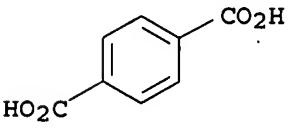
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1956:67429 CAPLUS
DOCUMENT NUMBER: 50:67429
ORIGINAL REFERENCE NO.: 50:12536d-e
TITLE: Separation of isophthalic and terephthalic acids for polymer manufacture
INVENTOR(S): Lum, Funston G.; Carlston, Earl F.
PATENT ASSIGNEE(S): California Research Corp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2742496		19560417	US 1952-310566	19520919

AB Isophthalic (I) and terephthalic (II) acids are separated by taking advantage of the fact that the hexamethylenediamine (III) salt of II is essentially insol. in saturated aqueous solns. (approx. 50 weight % at 25°) of the corresponding salt of I. Thus, a mixture of 140 g. I and 60 g. II was dissolved in a solution of 140 g. III in 238 g. water by warming to 80°. After cooling to 25°, the III salt of II was removed by centrifugation or filtration, adhering portions of the saturated aqueous solution of the III salt of I being washed out with EtOH and 3:1 EtOH-H2O. Mixts. of the III salts of I and II represented by unwashed filter cakes are used directly in preparation of copolymers. Thus, a 50:50 mixture of the salts yields a polymer, m. approx. 290°, while the polyamide resin obtained from pure III salt of I m. approx. 208°.
IT 100-21-0P, Terephthalic acid
RL: PREP (Preparation)
(separation from isophthalic acid, and polyamides from 1,6-hexanediamine and isophthalic and terephthalic acids)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1956:44877 CAPLUS
DOCUMENT NUMBER: 50:44877
ORIGINAL REFERENCE NO.: 50:8733c-h
TITLE: Preparation of benzenepolycarboxylic acids by air oxidation
PATENT ASSIGNEE(S): Imhausen & Co., G. m. b. H.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

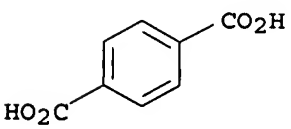
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 727989		19550413	GB 1952-8872	19520407

AB Benzenepolycarboxylic acids are prepared by air oxidation of alkylbenzenes or Me alkylbenzoates catalyzed by Co salts of C6-C10-alkanoic acids (I). p-MeC6H4CO2Me (II) (1 kg.) is oxidized 8 hrs. at 120° with air at 1.5 l./min. with 2 g. I, the crystalline p-MeO2CC6H4CO2H (III) (240 g.) filtered off, and the filtrate, containing I reoxidized 5.5 hrs. at 140°. When oxidation is done at 150°, considerable III is removed with the exit gases. Similarly, m-MeC6H4CO2Me (1 kg.) oxidized at 130-40° gives in 68 hrs. 460 g. m-MeO2CC6H4CO2H, which can be obtained nearly quantitatively by several reoxidations. o-MeC6H4CO2Me as above at 130-40° gives 330 g. of a solid mixture yielding on conversion to the Me ester 280 g. o-C6H4(CO2Me)2. Xylene (87 % para) (1 kg.) and 2 g. I are oxidized 15 hrs. at 125° with air as above, the exit gases condensed, the cooled reaction mixture is filtered, the filtrate and exit gas condensate are reoxidized, the product acids esterified with MeOH, the p-C6H4(CO2Me)2 (IV) is crystallized, separated from the II, the II oxidized with I and air at 140-150° until much III seps., the III collected, and the filtrate and fresh II reoxidized; 1 kg. xylene gives 160 g. IV and 1300 g. p-HO2C6H4CO2Me. Oxidation of Pb m-toluate 48 hrs. at 180°, conversion of the products to acids, and extraction with benzene leaves 30 g. m-C6H4(CO2H)2 (V). m-Toluic acid with 0.2 g. I heated 48 hrs. at 140° with air passed in at 2 l./min. gives in a like process 12 g. V. (m-MeC6H4CO)2O heated 24 hrs. at 140°, followed by saponification, acidification, and extraction with C6H6, leaves 98 g. V, but only 12 g. V is obtained when the oxidation proceeds 48 hrs. (p-MeC6H4CO)2O and 2 g. I heated 42 hrs. with air at 1.5 l./min. and 125° and the oxidate esterified with MeOH gives 95 g. IV. Tech. p-xylene (60 kg.) and 120 g. I, in a 100-l. oxidation vessel provided with an air distributor and a reflux condenser with a water separator, are treated at 130-40° with 1.5-2 cu. m. air/hr.; when the acid number of the products has risen to 250, 60 kg./hr. of oxidation mixture is continuously withdrawn, cooled to 20°, freed by centrifuging from the separated crystals of acid mixture (which collects at 8 kg./hr.), the 52 kg./hr. of filtrate and wash xylene continuously recycled to the oxidation vessel so that an acid number between 200-280 is maintained, the acid mixture esterified with MeOH, after removal of the solvents and addition of 2 g. I/kg., oxidized at 140° with 1.5 l. air/min./kg. in a 100-l. oxidation vessel which always contains 60 kg. ester and from which, after attainment of an acid number of 100-150 and cooling to 30°, 6 kg./hr. p-HO2CC6H4CO2Me is removed and the filtrate recycled. Pseudocumene (VI), oxidized 96 hrs. at 140°, the excess VI distilled off, and the residue esterified with MeOH and distilled gives a main fraction b11 100-28°; 1 kg. of this product oxidized 51 hrs. at 125° with 2 g. I and air at 2 l./min., the product esterified with MeOH, the oxidation and esterification repeated twice, and the product distilled gives 540 g. tri-Me trimellitate.

IT 100-21-0P, Terephthalic acid, methyl esters
RL: PREP (Preparation)
(preparation of)

RN 100-21-0 CAPLUS

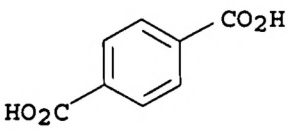
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)



L11 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1955:68976 CAPLUS
DOCUMENT NUMBER: 49:68976
ORIGINAL REFERENCE NO.: 49:13168g-i,13169a-c
TITLE: The chloromethylation of toluene and conversion of p-xylyl chloride to terephthaloyl chloride
AUTHOR(S): Rabjohn, Norman
CORPORATE SOURCE: Goodyear Tire & Rubber Co., Akron, O.
SOURCE: Journal of the American Chemical Society (1954), 76, 5479-81
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 49:68976

AB A study has been made of the chloromethylation of PhMe. Mixts. of o-MeC6H4CH2Cl (I) and the p-isomer (II) have been chlorinated in the side chains and it has been shown that p-C6H4(CCl3)2 (III) can be separated from the mixts. III has been converted to p-C6H4(COCl)2 (IV) in high yields by treatment with maleic acid (V). PhMe (800 g.), 150 cc. 40% aqueous CH2O, 300 cc. concentrated HCl, and 1.36 g. ZnCl2 treated with rapid stirring 12 hrs. at 60° with dry HCl, the PhMe layer washed twice with H2O, once with 10% aqueous NaHCO3, and again twice with H2O, dried, the PhMe removed by vacuum distillation, and the residue fractionated gave 248 g. mixed I and II, b25 96-8°, and 16 g. residue. o-C6H4Me2 chlorinated with SO2Cl2 by the method of Kharasch and Brown (C.A. 33, 7728.8) gave I, b25 95-6°, n20D 1.5391. p-C6H4Me2 gave similarly II, b25 96-7°, n20D 1.5367. The viscosity data of mixts. of I and II at 30° plotted against the % composition gave a graph which was used for the analysis of mixts. of I and II of unknown composition Mixed I and II (2710 g.) slowly treated with Cl at 145-50° under illumination with a 150-w. bulb gave 5720 g. of an equimolar mixture of III and o-CCl3C6H4CHCl2 (VI). A III-VI mixture (100 g.) dissolved with warming in 75 cc. AcOH and the solution cooled to 10° gave 46.0 g. III, m. 107-9°. A III-VI mixture (5550 g.) kept 1 day at room temperature and the resulting solid centrifuged at 3500 r.p.m. gave 2500 g. III, m. 107-10°. III (469.5 g.) and 3.1 g. ZnCl2 treated at 135-40° with 353 g. V in small portions, the resulting melt heated 5 min. with stirring, cooled to about 80°, decanted from the ZnCl2, the maleic anhydride removed at 85°/20 mm., and the residue distilled gave, after a small forerun at 85-134°/20 mm., 289 g. (95%) IV, b12 134-6°. A III-VI mixture (1326 g.) in 1000 cc. refluxing AcOH treated dropwise with stirring with 10 cc. H2SO4 in 400 cc. H2O, then heated about 40 hrs., and the precipitate filtered, washed with AcOH and Me2CO, and dried gave 393 g. p-C6H4(CO2H)2; the filtrate treated with 15 g. NaOH, evaporated, and the residue recrystd. from H2O gave 206 g. o-OHCC6H4CO2H, m. 94-6°. A III-VI mixture (591 g.) and 5.3 g. ZnCl2 heated with stirring at 135°, treated with 470 g. V in portions, the mixture heated 0.5 hr., cooled to 80°, decanted, and the material distilled gave, after removal of the anhydride, 300 g. distillate, b10 140-4°, which yielded 130 g. impure IV, b10 134-7°, and 105 g. mixture of IV and 3-chlorophthalide (VII), b10 137-44°. VI (128 g.) and 1.5 g. ZnCl2 treated at 135° with stirring with 110 g. V in portions, and the mixture heated 15 min., cooled to 80°, decanted, and distilled gave 26 g. VII, m. 149-50°, m. 60-1°.

IT 100-21-0P, Terephthalic acid
RL: PREP (Preparation)
(formation of, from α,α,α,α',α',α'-hexachloro-p-xylene)
RN 100-21-0 CAPLUS
CN 1,4-Benzenedicarboxylic acid (CA INDEX NAME)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HO2C